

WHAT IS CLAIMED IS:

- 1 1. A method for managing calibration files in a printing system,
- 2 comprising:
 - 3 printing patches using a screening algorithm and incorporating at least one
 - 4 output appearance factor;
 - 5 generating a calibration file from measured color values of the printed patches
 - 6 mapping a color space for the printed patches to a color space of a printer used to
 - 7 print the patches; and
 - 8 associating information with the calibration file indicating the printer and at
 - 9 least one output appearance attribute for use in selecting one calibration file to use
 - 10 when printing a print job.

1 2. The method of claim 1 wherein the associated printer information
2 indicates the name of the screening algorithm used in generating the calibration file.

1 3. The method of claim 1, wherein the at least one output appearance
2 factor is a member of a set of printing variables consisting of: toner, paper type,
3 environmental factors, desired output, and target printer to emulate.

1 4. The method of claim 1, wherein printing the patches comprises
2 selecting one printer, one screening algorithm for the selected printer, and at least one
3 output appearance factor of the print job, and wherein associating information with
4 the calibration file comprises associating: a printer name indicating the selected
5 printer; a screening name indicating the selected screening algorithm; and an
6 appearance tag indicating the selected at least one output appearance factor.

1 5. The method of claim 4, wherein associating information with the
2 calibration file comprises creating a file name for the calibration file including the
3 printer name, the screening name, and the appearance tag.

1 6. The method of claim 1, further comprising:
2 generating the print job comprising a gray scale image; and
3 associating output appearance and printer attribute information with the print
4 job for use in selecting one calibration file to use to calibrate the gray scale image
5 when printing the print job.

1 7. The method of claim 6, wherein selecting one calibration file
2 comprises selecting one calibration file having associated output appearance and
3 printer information indicating compatibility with the printer and output appearance
4 information associated with the print job.

1 8. The method of claim 7, wherein determining compatibility of a print
2 job and calibration file comprises:
3 searching a directory of calibration files for calibration files having associated
4 printer information matching the printer information associated with the print job,
5 wherein matching printer information indicates that the printer selected to print the
6 print job matches the printer used to print the patches considered when generating the
7 calibration file; and
8 selecting from the calibration files generated with the printer associated with
9 the print job one calibration file associated with at least one output appearance
10 attribute that matches the at least one output appearance attribute associated with the
11 print job, wherein the selected calibration file is used to print the print job.

1 9. The method of claim 8, wherein there are multiple directories
2 including calibration files, wherein a first directory is searched for calibration files
3 compatible with the print job and a second directory is searched next, wherein the first
4 found compatible calibration file is used to calibrate the gray scale image.

1 10. The method of claim 6 , wherein associating output appearance and
2 printer attribute information with the print job comprises:
3 determining printers available to print a print job and output appearances
4 supported by the printer;
5 displaying the available printers and output appearances; and
6 receiving user input indicating one of the displayed printers and at least one of
7 the displayed output appearances to associate with the print job.

1 11. The method of claim 1, wherein printing the patches comprises
2 selecting: one printer having multiple printing engines, one screening algorithm for
3 the selected printer, and at least one output appearance factor of the print job, and
4 wherein associating information with the calibration file comprises associating: a
5 printer name indicating the selected printer; a screening name indicating the selected
6 screening algorithm; an appearance tag indicating the selected at least one output
7 appearance factor; and an indication of the printer engine used to print the calibration
8 file.

1 12. The method of claim 11, further comprising:
2 generating the print job comprising a gray scale image; and
3 associating output appearance and printer attribute information with the print
4 job, and associating one of the printer engines with specific pages within the print job,
5 such that one printer engine is selected for use with a first set of pages and another
6 printer engine is selected for use with a second set of pages, wherein the information

7 associated with the print job is used to select one printer engine specific calibration
8 file to use to calibrate the pages of the gray scale image when printing the print job.

1 13. The method of claim 12, wherein selecting one calibration file to use
2 to print the first and second sets of pages within the print job comprises selecting one
3 calibration file having associated output appearance, printer, and printer engine
4 information indicating compatibility with the printer, printer engine, output
5 appearance information associated with the first and second sets of pages of the print
6 job.

1 14. A system for managing calibration files in a printing system,
2 comprising:
3 a computer system;
4 a printer in communication with the computer;
5 a storage device accessible to the computer system;
6 program logic implemented within the computer, comprising:
7 (i) means for printing patches using a screening algorithm and
8 incorporating at least one output appearance factor;
9 (ii) means for generating a calibration file from measured color values
10 of the printed patches mapping a color space for the printed patches to a color
11 space of a printer used to print the patches;
12 (iii) means for associating information with the calibration file
13 indicating the printer and at least one output appearance attribute for use in
14 selecting one calibration file to use when printing a print job; and
15 (iv) means for storing the calibration file and associated information in
16 the storage device.

1 15. The system of claim 14, wherein the computer system comprises a
2 client computer and a server, wherein the client computer, server, and printer
3 communicate using at least one network communication line, wherein the program
4 logic is implemented in the client and server, wherein the client communicates
5 commands to the server to cause the server to print patches on the printer, generate
6 the calibration file, associate information with the calibration file, and store the
7 calibration file and associated information in the storage device.

1 16. The system of claim 14, wherein the associated printer information
2 indicates the name of the screening algorithm used in generating the calibration file.

1 17. The system of claim 14, wherein the at least one output appearance
2 factor is a member of a set of printing variables consisting of: toner, paper type,
3 environmental factors, desired output, and target printer to emulate.

1 18. The system of claim 14, wherein the program logic for printing the
2 patches comprises means for selecting one printer, one screening algorithm for the
3 selected printer, and at least one output appearance factor of the print job, and
4 wherein the program logic for associating information with the calibration file
5 comprises means for associating: a printer name indicating the selected printer; a
6 screening name indicating the selected screening algorithm; and an appearance tag
7 indicating the selected at least one output appearance factor.

1 19. The system of claim 18, wherein the program logic for associating
2 information with the calibration file comprises means for creating a file name for the
3 calibration file including the printer name, the screening name, and the appearance
4 tag.

1 20. The system of claim 14, wherein the program logic further comprises:
2 means for generating the print job comprising a gray scale image; and
3 means for associating output appearance and printer attribute information with
4 the print job for use in selecting one calibration file to use to calibrate the gray scale
5 image when printing the print job.

1 21. The system of claim 20, wherein the program logic for selecting one
2 calibration file comprises means for selecting one calibration file having associated
3 output appearance and printer information indicating compatibility with the printer
4 and output appearance information associated with the print job.

1 22. The system of claim 21, wherein the program logic for determining
2 compatibility of a print job and calibration file comprises:
3 means for searching a directory of calibration files in the storage device for
4 calibration files having associated printer information matching the printer
5 information associated with the print job, wherein matching printer information
6 indicates that the printer selected to print the print job matches the printer used to
7 print the patches considered when generating the calibration file; and
8 means for selecting from the calibration files generated with the printer
9 associated with the print job one calibration file associated with at least one output
10 appearance attribute that matches the at least one output appearance attribute
11 associated with the print job, wherein the selected calibration file is used to print the
12 print job.

1 23. The system of claim 22, wherein the storage device includes multiple
2 directories including calibration files, wherein a first directory in the storage device is
3 searched for calibration files compatible with the print job and a second directory in

4 the storage device is searched next, wherein the first found compatible calibration file
5 is used to calibrate the gray scale image.

1 24. The system of claim 20, wherein the program logic for associating
2 output appearance and printer attribute information with the print job comprises:
3 means for determining printers available to print a print job and output
4 appearances supported by the printer;
5 means for displaying the available printers and output appearances; and
6 means for receiving user input indicating one of the displayed printers and at
7 least one of the displayed output appearances to associate with the print job.

1 25. The system of claim 14, wherein the program logic for printing the
2 patches comprises means for selecting: one printer having multiple printing engines,
3 one screening algorithm for the selected printer, and at least one output appearance
4 factor of the print job, and wherein the program logic for associating information with
5 the calibration file comprises means for associating: a printer name indicating the
6 selected printer; a screening name indicating the selected screening algorithm; an
7 appearance tag indicating the selected at least one output appearance factor; and an
8 indication of the printer engine used to print the calibration file.

1 26. The system of claim 25, wherein the program logic further comprises:
2 means for generating the print job comprising a gray scale image; and
3 means for associating output appearance and printer attribute information with
4 the print job, and means for associating one of the printer engines with specific pages
5 within the print job, such that wherein one printer engine is selected for use with a
6 first set of pages and another printer engine is selected for use with a second set of
7 pages, wherein the information associated with the print job is used to select one

8 printer engine specific calibration file to use to calibrate the pages of the gray scale
9 image when printing the print job.

1 27. The system of claim 26, wherein the program logic for selecting one
2 calibration file to use to print the first and second sets of pages within the print job
3 comprises means for selecting one calibration file having associated output
4 appearance, printer, and printer engine information indicating compatibility with the
5 printer, printer engine, output appearance information associated with the first and
6 second sets of pages of the print job.

1 28. An article of manufacture for use in managing calibration files in a
2 printing system, the article of manufacture comprising computer usable media
3 including at least one computer program embedded therein that causes the computer
4 to perform:

5 printing patches using a screening algorithm and incorporating at least one
6 output appearance factor;
7 generating a calibration file from measured color values of the printed patches
8 mapping a color space for the printed patches to a color space of a printer used to
9 print the patches; and

10 associating information with the calibration file indicating the printer and at
11 least one output appearance attribute for use in selecting one calibration file to use
12 when printing a print job.

1 29. The article of manufacture of claim 28, wherein the associated printer
2 information indicates the name of the screening algorithm used in generating the
3 calibration file.

1 30. The article of manufacture of claim 28, wherein the at least one output
2 appearance factor is a member of a set of printing variables consisting of: toner, paper
3 type, environmental factors, desired output, and target printer to emulate.

1 31. The article of manufacture of claim 28, wherein printing the patches
2 comprises selecting one printer, one screening algorithm for the selected printer, and
3 at least one output appearance factor of the print job, and wherein associating
4 information with the calibration file comprises associating: a printer name indicating
5 the selected printer; a screening name indicating the selected screening algorithm; and
6 an appearance tag indicating the selected at least one output appearance factor.

1 32. The article of manufacture of claim 31, wherein associating
2 information with the calibration file comprises creating a file name for the calibration
3 file including the printer name, the screening name, and the appearance tag.

1 33. The article of manufacture of claim 28, further comprising:
2 generating the print job comprising a gray scale image; and
3 associating output appearance and printer attribute information with the print
4 job for use in selecting one calibration file to use to calibrate the gray scale image
5 when printing the print job.

1 34. The article of manufacture of claim 33, wherein selecting one
2 calibration file comprises selecting one calibration file having associated output
3 appearance and printer information indicating compatibility with the printer and
4 output appearance information associated with the print job.

1 35. The article of manufacture of claim 34, wherein determining
2 compatibility of a print job and calibration file comprises:

3 searching a directory of calibration files for calibration files having associated
4 printer information matching the printer information associated with the print job,
5 wherein matching printer information indicates that the printer selected to print the
6 print job matches the printer used to print the patches considered when generating the
7 calibration file; and

8 selecting from the calibration files generated with the printer associated with
9 the print job one calibration file associated with at least one output appearance
10 attribute that matches the at least one output appearance attribute associated with the
11 print job, wherein the selected calibration file is used to print the print job.

1 36. The article of manufacture of claim 35, wherein there are multiple
2 directories including calibration files, wherein a first directory is searched for
3 calibration files compatible with the print job and a second directory is searched next,
4 wherein the first found compatible calibration file is used to calibrate the gray scale
5 image.

1 37. The article of manufacture of claim 33, wherein associating output
2 appearance and printer attribute information with the print job comprises:
3 determining printers available to print a print job and output appearances
4 supported by the printer;
5 displaying the available printers and output appearances; and
6 receiving user input indicating one of the displayed printers and at least one of
7 the displayed output appearances to associate with the print job.

1 38. The article of manufacture of claim 28, wherein printing the patches
2 comprises selecting one printer having multiple printing engines, one screening
3 algorithm for the selected printer, and at least one output appearance factor of the
4 print job, and wherein associating information with the calibration file comprises

5 associating: a printer name indicating the selected printer; a screening name indicating
6 the selected screening algorithm; an appearance tag indicating the selected at least one
7 output appearance factor; and an indication of the printer engine used to print the
8 calibration file.

1 39. The article of manufacture of claim 38, further comprising:
2 generating the print job comprising a gray scale image; and
3 associating output appearance and printer attribute information with the print
4 job, and associating one of the printer engines with specific pages within the print job,
5 such that one printer engine is selected for use with a first set of pages and another
6 printer engine is selected for use with a second set of pages, wherein the information
7 associated with the print job is used to select one printer engine specific calibration
8 file to use to calibrate the pages of the gray scale image when printing the print job.

1 40. The article of manufacture of claim 39, wherein selecting one
2 calibration file to use to print the first and second sets of pages within the print job
3 comprises selecting one calibration file having associated output appearance, printer,
4 and printer engine information indicating compatibility with the printer, printer
5 engine, output appearance information associated with the first and second sets of
6 pages of the print job.